

CIRCUIT HAVING GLOBAL FEEDBACK FOR PROMOTING LINEAR OPERATION

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The diagram illustrates a complex electronic circuit with the following components and connections:

- Power Sources:** A battery symbol labeled V_{FB} is connected to the left side of the circuit. A ground connection is labeled GND .
- Capacitors:** C_1 is connected between the V_{FB} terminal and ground. C_F is connected between the output node and ground.
- Diodes:** Diodes D_1 and D_2 are connected in series with the V_{FB} source. Diode D_1 is connected between the V_{FB} source and the junction between C_1 and C_F . Diode D_2 is connected between the junction between C_1 and C_F and the output node.
- Transistors:** Transistor T_{CP1} is connected between the junction between C_1 and C_F and the output node. Transistor T_{CP2} is connected between the junction between C_1 and C_F and the output node.
- Switches:** Two switches, SW_1 and SW_2 , are connected in parallel across the V_{FB} source. SW_1 is connected between the V_{FB} source and the junction between C_1 and C_F . SW_2 is connected between the junction between C_1 and C_F and the output node.
- Inductances:** Inductances L_R and L_{R1} are connected in series with the V_{FB} source. Inductance L_{R2} is connected in series with the output node.
- Feedback Path:** The output node is connected to a feedback path consisting of inductance L_R , switch SW_1 , inductor L_{R1} , and capacitor C_R . This path also connects to a lamp labeled $LAMP$.
- Output:** The final output node is labeled I_{CS} .

FIG. 1
(PRIOR ART)

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The circuit diagram illustrates a power supply stage with the following components and connections:

- Input:** A 100V AC source is connected to the primary winding of a transformer.
- Transformer:** The transformer has two secondary windings. The primary winding is connected to 100V AC. The first secondary winding provides power to a bridge rectifier consisting of diodes D1 and D2, followed by a filter capacitor C1. This stage outputs 108V DC.
- Feedback Path:** A portion of the 108V output is fed back through a resistor RFB to the primary winding of the transformer.
- Global Feedback Path:** The 108V output is also connected to a global feedback network. This network includes a series inductor L1, a shunt capacitor C2, and a shunt inductor L2. The output of this network is connected to the primary winding of the transformer.
- Power Delivery:** The 108V DC output is delivered to a load labeled "LAMP".
- Switches:** Two switches, SW1 and SW2, are connected in parallel across the 108V output line. SW1 is connected between the 108V output and ground. SW2 is connected between the 108V output and the positive terminal of the lamp.
- Output Voltages:** The 108V output is labeled 108. The 100V AC input is labeled 100. The 100V AC source is labeled 100.

Fig. 2

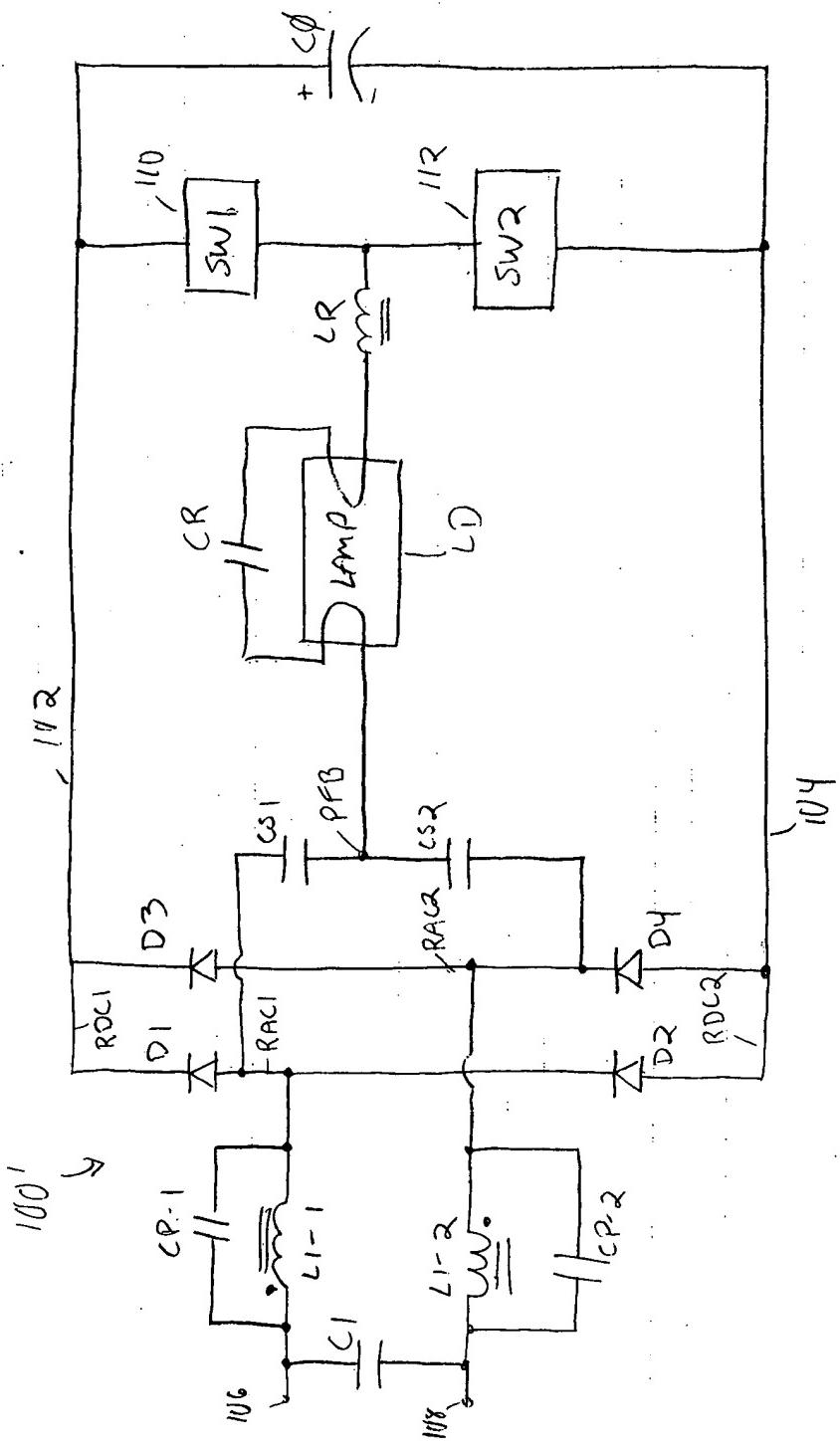


Fig. 3

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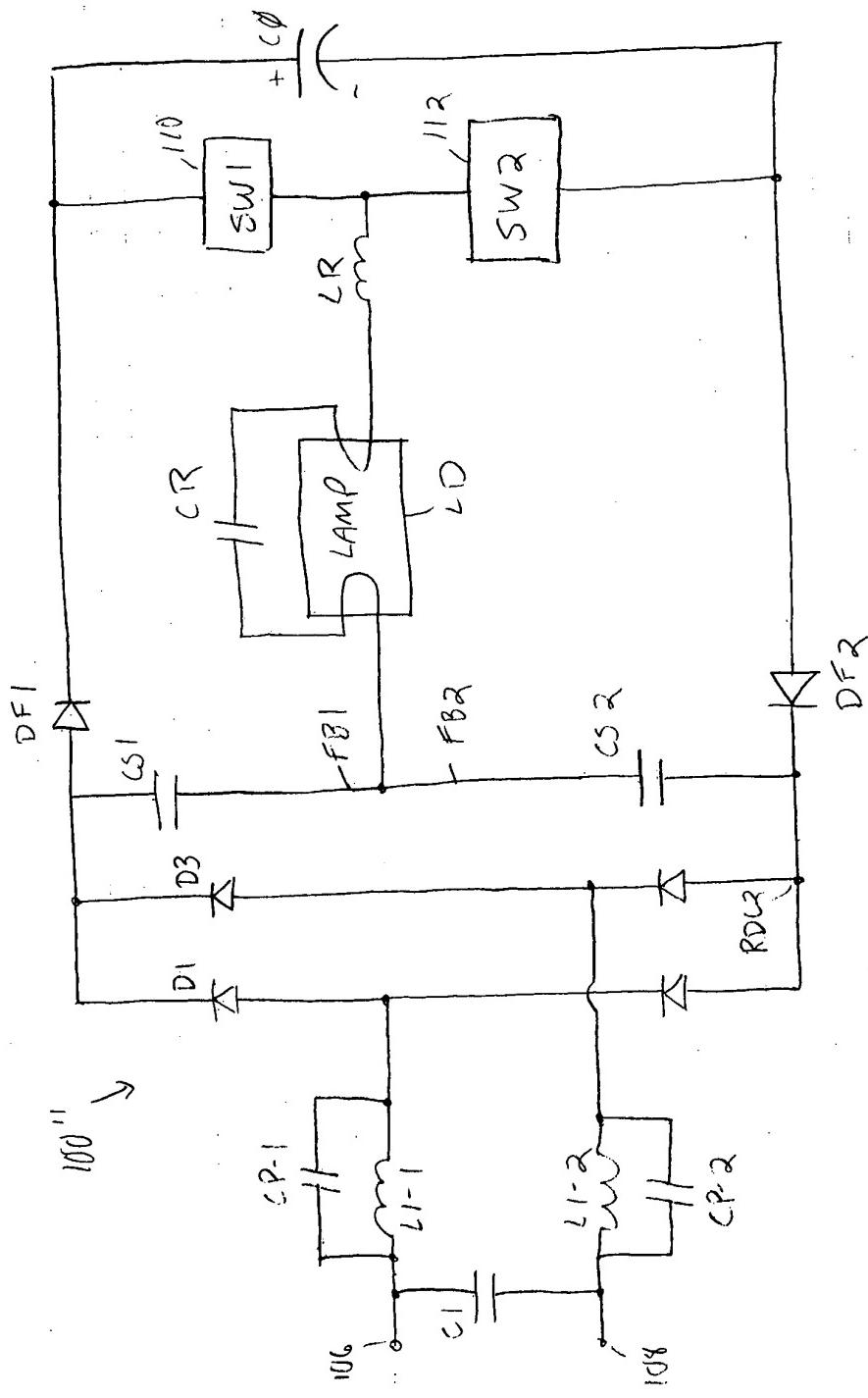


Fig. 4

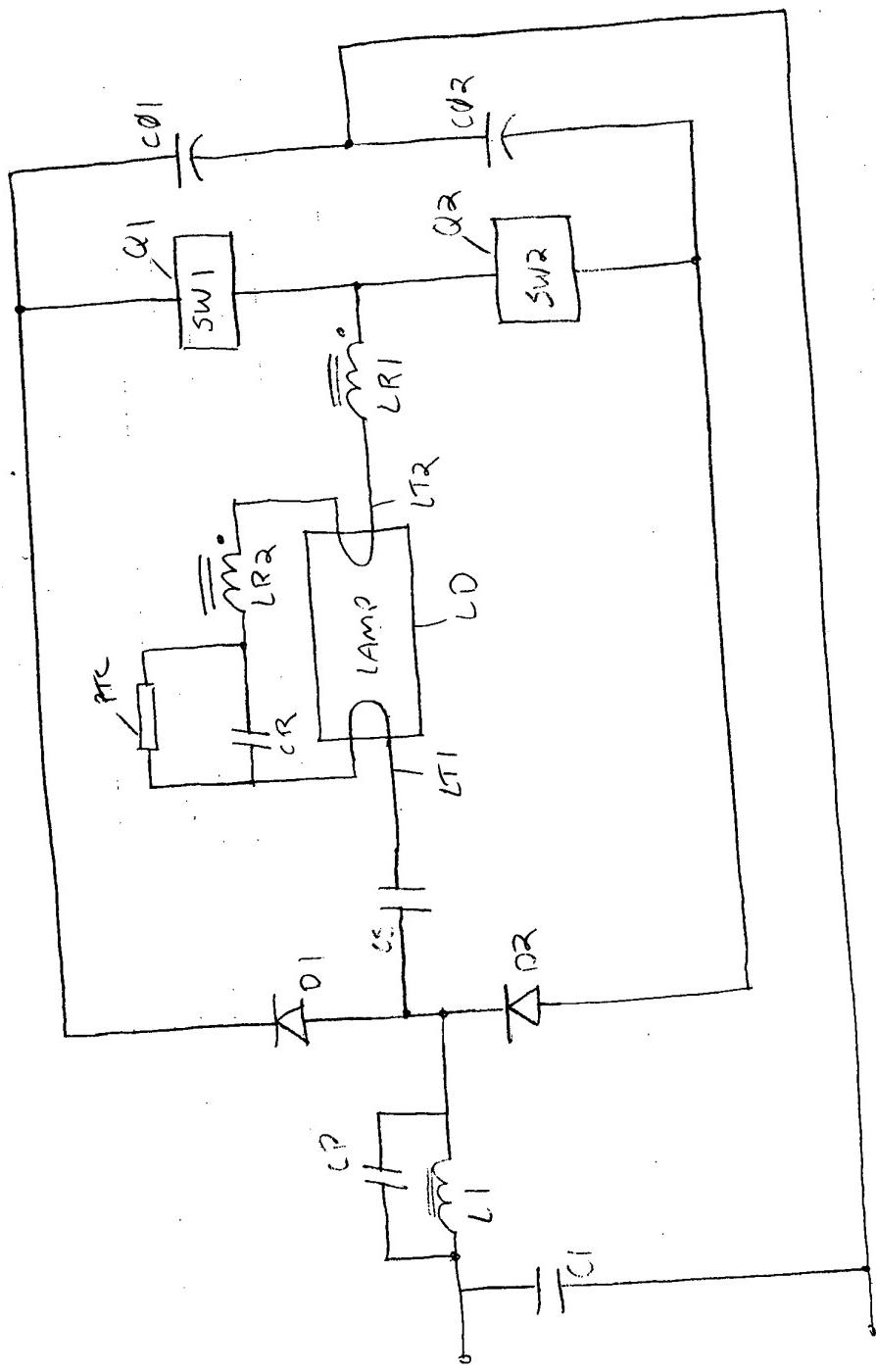


Fig. 5

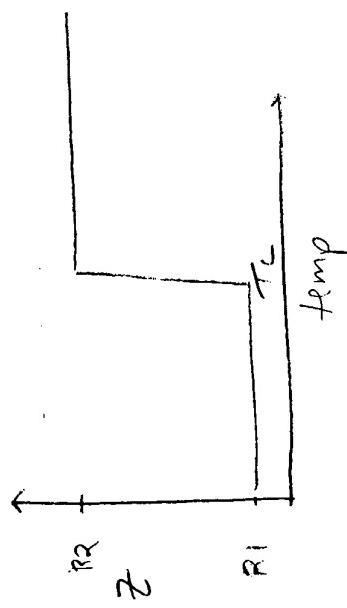


Fig. 6

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FIG. 7A

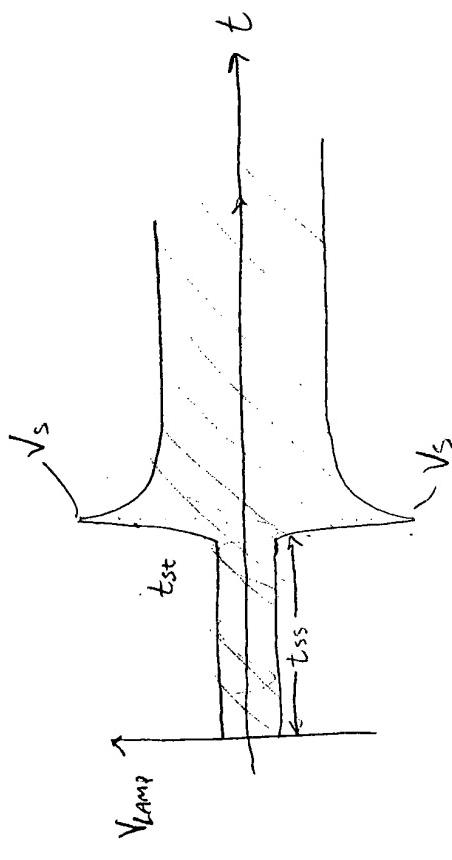


FIG. 7B

